

Late-Stage Preclinical Research Targeting Prostate Cancer Gets Almost \$4 Million Support from California's Stem Cell Agency

Posted: July 19, 2018

Late-Stage Preclinical Research Targeting Prostate Cancer Gets Almost \$4 Million Support from California's Stem Cell Agency

Oakland, CA – A program hoping to supercharge a patient's own immune system cells to attack and kill a treatment resistant form of prostate cancer was today awarded \$3.99 million by the governing Board of the California Institute for Regenerative Medicine (CIRM)

In the U.S., prostate cancer is the second most common cause of cancer deaths in men. An estimated 170,000 new cases are diagnosed each year and over 29,000 deaths are estimated in 2018. Early stage prostate cancer is usually managed by surgery, radiation and/or hormone therapy. However, for men diagnosed with castrate-resistant metastatic prostate cancer (CRPC) these treatments often fail to work and the disease eventually proves fatal.

Poseida Therapeutics will be funded by CIRM to develop genetically engineered chimeric antigen receptor T cells (CAR-T) to treat metastatic CRPC. In cancer, there is a breakdown in the natural ability of immune T-cells to survey the body and recognize, bind to and kill cancerous cells. Poseida is engineering T cells and T memory stem cells to express a chimeric antigen receptor that arms these cells to more efficiently target, bind to and destroy the cancer cell. Millions of these cells are then grown in the laboratory and then reinfused into the patient. The CAR-T memory stem cells have the potential to persist long-term and kill residual cancer cells.

"This is a promising approach to an incurable disease where patients have few options," says Maria T. Millan, M.D., President and CEO of CIRM. "The use of chimeric antigen receptor engineered T cells has led to impressive results in blood malignancies and a natural extension of this promising approach is to tackle currently untreatable solid malignancies, such as castrate resistant metastatic prostate cancer. CIRM is pleased to partner on this program and to add it to its portfolio that involves CAR T memory stem cells."

Poseida Therapeutics plans to use the funding to complete the late-stage testing needed to apply to the Food and Drug Administration for the go-ahead to start a clinical trial in people.

The CIRM Board also voted to approve investing \$10 million for eight projects under its Discovery Quest Program. The Quest program promotes the discovery of promising new stem cell-based technologies that will be ready to move to the next level, the translational category, within two years, with an ultimate goal of improving patient care.

Among those approved for funding are:

- Eric Adler at UC San Diego is using genetically modified blood stem cells to treat Danon Disease, a rare and fatal condition that affects the heart
- Li Gan at the Gladstone Institutes will use induced pluripotent stem cells to develop a therapy for a familial form of dementia
- Saul Priceman at City of Hope will use CAR-T therapy to develop a treatment for recurrent ovarian cancer

Because the amount of funding for the recommended applications exceeded the money set aside, the Application Subcommittee voted to approve partial funding for two projects, DISC2-11192 and DISC2-11109 and to recommend, at the next full Board meeting in October, that the projects get the remainder of the funds needed to complete their research.

APPLICATION	TITLE	INSTITUTION	CIRM COMMITTED FUNDING

DISC2-11131	Genetically Modified Hematopoietic Stem Cells for the Treatment of Danon Disease	U.C San Diego	\$1,393,200
DISC2-11157	Preclinical Development of An HSC-Engineered Off-The-Shelf iNKT Cell Therapy for Cancer	U.C. Los Angeles	\$1,404,000
DISC2-11036	Non-viral reprogramming of the endogenous TCR α locus to direct stem memory T cells against shared neoantigens in malignant gliomas	U.C. San Francisco	\$900,000
DISC2-11175	Therapeutic immune tolerant human islet-like organoids (HILOs) for Type 1 Diabetes	Salk Institute	\$1,637,209
DISC2-11107	Chimeric Antigen Receptor-Engineered Stem/Memory T Cells for the Treatment of Recurrent Ovarian Cancer	City of Hope	\$1,381,104
DISC2-11165	Develop iPSC-derived microglia to treat progranulin-deficient Frontotemporal Dementia	Gladstone Institutes	\$1,553,923
DISC2-11192	Mesenchymal stem cell extracellular vesicles as therapy for pulmonary fibrosis	U.C. San Diego	\$865,282

DISC2-11109	Regenerative Thymic Tissues as Curative Cell Therapy for Patients with 22q11 Deletion Syndrome	Stanford University	\$865,282
-------------	---	---------------------	-----------

About CIRM

At CIRM, we never forget that we were created by the people of California to accelerate stem cell treatments to patients with unmet medical needs, and act with a sense of urgency to succeed in that mission.

To meet this challenge, our team of highly trained and experienced professionals actively partners with both academia and industry in a hands-on, entrepreneurial environment to fast track the development of today's most promising stem cell technologies.

With \$3 billion in funding and approximately 300 active stem cell programs in our portfolio, CIRM is the world's largest institution dedicated to helping people by bringing the future of cellular medicine closer to reality.

For more information go to www.cirm.ca.gov

Source URL: <https://www.cirm.ca.gov/about-cirm/newsroom/press-releases/07192018/late-stage-preclinical-research-targeting-prostate>